Using Critical Thinking to Stimulate In-Service Teachers' Cognitive Growth in Multicultural Education

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The two-fold purpose of the present qualitative study was: (a) to describe patterns of cognitive-ethical development, using Perry's model (1970), and (b) to explore the use of critical thinking for changing in-service teachers' personal and professional beliefs. In-service teachers taking a multicultural education graduate course participated as insightful subject-researchers. Written assignments and in-class discussions were used as both tools for data collection and stimuli for changing in-service teachers' beliefs. Three major qualitative patterns were found in the data. First, experienced teachers linked their beliefs and practices indicating higher cognitive-ethical developmental levels. Second, different content modules led to various cognitive-ethical developmental levels. Third, teachers could not connect teaching practices, research, and multicultural education courses. In conclusion, in-service teachers need to transform their educational beliefs into concrete strategies in multicultural education courses.

This exploratory study has two objectives: (1) to describe existing patterns in cognitive-ethical development and educational belief systems held by in-service teachers taking a multicultural education graduate course; and (2) to explore the use of critical thinking for changing in-service teachers' personal and professional beliefs. Presently there is a need for studies that document the implementation of new pedagogical strategies for affecting teachers beliefs and knowledge in multicultural education. In relation to this need, Trueba (1992) stated, "Universities are the main instrument that democratic societies use to generate and transmit new knowledge, and to inculcate democratic values and respect for ethnic and racial differences" (p. 110). Thus, he considered that universities are responsible for

promoting multicultural education. A review of the constructs studied in this paper will be presented below, including: the role of critical thinking in multicultural education; the inconsistent use of terms for describing beliefs; the relationship between beliefs, knowledge, and practice; and the methodological problem of measuring the construct of teachers' beliefs. Finally, the position taken in this paper regarding teachers' beliefs and knowledge will be discussed.

The Role of Critical Thinking in Multicultural Education

Traditionally, critical thinking has been considered a central part of professors' scholarly teaching and research activities. In any multicultural education course, professors should stimulate teachers to actively generate new knowledge in relation to their personal and professional experiences. However, currently passive learning models are often implemented by professors and are reproduced by teachers in multicultural settings. Change is being infused by the school reform movement as it endorses critical thinking pedagogical models that: (a) meet the needs of culturally-linguistically diverse students, (b) develop sensitivity to diversity, and (c) recognize the powerful influence of beliefs on teaching practices. Thus, following the school reform movement, educators need to undergo an immersion process of "learning how to think critically" in order to become role models for diverse students.

It is still difficult to implement critical thinking pedagogical models due to different conceptualizations of critical thinking. According to Gray (1993), two major definitions include: (a) a set of sequential cognitive skills for evaluating knowledge that can be explicitly taught; and (b) a disposition that varies due to the learners' reasoning styles, the content to be learned, and the context in which learners are immersed. A dispositional model is followed in this study (Gray, 1993; Adler, 1993). The model establishes that the best students and scholars are the ones who can transform content into meaningful idiosyncratic elaborations, who can relate prior experiences to new knowledge, who can use the classroom as a social environment for providing role models for thinking, and who can reflect critically on

their subjective learning and practice. This study assumes that as
instructional experiences are shared, learners engage in the subjective
knowledge construction process that leads them to achieve similar
cognitive-ethical developmental stages. This definition of critical
thinking opens up a promising new paradigm that was used as a
conceptual foundation in this study.

Teachers' Beliefs

The conceptual framework for this study includes two major
areas of beliefs held by teachers. The first area is the inconsistent use
of terms for beliefs. The second area is the relationship between
beliefs, knowledge, and practice. These two areas were selected
because of the controversy towards teachers beliefs apparent in the
literature.

Inconsistent use of terms. According to Alexander, Schallert,
and Hare (1991), researchers give different connotations to the term
teachers' *beliefs*, which were identified by Clandinin and Connelli
(1987) as *knowledge*, *attitudes*, *guiding images*, and *metaphors*.
Beliefs have been defined as the cognitive component of
understandings, premises, or propositions held by a person about the
world. Beliefs are organized in systems or clusters forming a semi-
logical structure of central and peripheral beliefs (Green, 1971,
Richardson, in press; Rockeach, 1968). The separation of beliefs in
clusters allows for the presence of contradictory beliefs across content
and clusters or belief systems. Pajares (1992) and Kagan (1992)
referred to the influence of content on beliefs when they differentiated
between teachers' general belief systems related to their personal
experiences and backgrounds, and their professional belief systems
related to educational issues. For instance, a popular professional
myth is that language proficiency reflects intelligence development
in people who are bilingual. This has been demonstrated to be a myth
(Gonzalez, 1993a).

Data in the present study showed some of the contradictory belief
systems held by the teachers for different contents in multicultural

education. For instance, some teachers characterized their classrooms as open democratic environment in which idiosyncratic needs were accepted. However, these same teachers described diverse learners as difficult-to-teach children, ignoring external cultural-linguistic factors and attributing supposed learning problems to internal causes. Thus, teachers should be provided with opportunities to establish relations across belief systems (Green, 1971; Richardson, in press).

The relationship between beliefs, knowledge, and practice. According to Pajares (1992), the major area of controversy in the study of teachers' beliefs centers on the differentiation between beliefs and knowledge. Rockeach (1968) identified three related components of beliefs: (a) a cognitive component related to knowledge, (b) an affective component related to emotions, and (c) a behavioral component related to action. Richardson (in press) described beliefs as the cognitive component of an individual's understanding about the world held as true. For Fenstermacher (1994), knowledge is "a form of true belief" which has a grouping sense (i.e., practical and personal knowledge derived from experience) and an epistemic status (i.e., justifiable premises for which evidence can be provided). Other authors (e.g., Nespor, 1987) have considered that knowledge systems were semantically stored according to their cognitive nature, whereas belief systems were stored in episodic memory due to their affective nature. Other authors have also referred to the episodic nature of beliefs using terms such as *guiding images* (Goodman, 1988) and *metaphors* (Munby, 1987). Finally, Kagan (1992) pointed out that studies on teachers' beliefs, knowledge, and practice have yielded consistently two major patterns. First, there are beliefs that are relatively stable and resistant to change held by teachers because of their affective nature and their role in forming part of a person's identity (e.g., Nespor 1987; Rokeach, 1968). Second, congruent teaching styles tend to be associated with teachers' beliefs and teaching experience (e.g., Richardson, in press).

Methodological Problems Involved in Measuring Beliefs

Kagan (1992) pointed out three methodological problems that

can occur when implementing studies on teachers' beliefs. First, the same instructional practices can be the expression of different underlying beliefs, making the operationalization and measuring of beliefs an inferential process. Second, it is difficult to consciously articulate beliefs, which tend to be implicit especially among novice teachers. Third, the private nature of beliefs may be an obstacle for honest expression in fear of being criticized by researchers.

In the present study, the explicit articulation of beliefs through writing and discussion was used as a metalinguistic pedagogical tool for stimulating critical thinking in in-service teachers as well as a data collection tool. In addition, Karmiloff-Smith (1986) pointed out that the same learner can represent different knowledge forms through language for different content domains. Kagan (1992) reported that teachers' beliefs may vary according to content domain. In the present study, it is proposed that teachers' knowledge and beliefs may also vary across content domains due to their different experiences. It is also assumed that teachers can articulate their experiences and beliefs explicitly through language.

Some authors (e.g., Erwin, 1983) have stated the need to develop reliable and valid measures of knowledge and beliefs. Perry's scheme (1970) of cognitive-ethical development seems to be an appropriate model for creating measures of knowledge and beliefs. The model is conceptually similar to Piaget's (1965) theory because it is structural and considers disequilibrium to be a drive for cognitive development. Perry's scheme presents four stages of cognitive and ethical development in college students including: (a) dualism, in which students tend to see issues in clear-cut simplistic terms and look to authorities for the answers; (b) multiplicity, in which students assume authority perspectives as they are still afraid of assuming a moral position; (c) relativism, in which students are able to take their own position and tolerate other contradictory viewpoints; and (d) commitment and empathy, in which students have developed a position and have gained awareness of their impact on society. These four stages include nine positions or substages; each of the first three stages encompasses two positions, and the fourth stage includes three positions.

Another controversial area affecting the study of teachers' beliefs is whether qualitative or positivistic research methods are used (Richardson, 1994). The present study attempts to merge both practical inquiry and formal research. One of the objectives of the present study that relates to practical inquiry is to explore teaching methodologies that stimulate students to reflect critically on their belief systems. The objective of the present study that relates to formal research is the documentation of teaching methodologies by collecting data that can contribute to a scholarly knowledge base. In the present study, possibilities for change in current teaching practices in multicultural education through the use of critical thinking are explored.

Position Taken Regarding Teachers' Beliefs

In this paper, an existential epistemological position is taken based on the assumption that teachers' belief systems are influenced by personal and professional experiences within a sociocultural milieu. This, in turn, can help them make explicit their beliefs given opportunities for elaboration and experiential transformation within a life-time learning process. There are some popular myths held as true that form part of teachers' professional beliefs. Popular cultural beliefs within mainstream America also form part of teachers' personal experiences. An example of a popular myth is the professional belief that when a minority child has acquired interpersonal proficiency skills in English, according to standardized language assessment scales, then the child can be accurately diagnosed using standardized tests in other developmental areas such as academics. This myth is a fallacy because standardized language scales mostly reflect functional but not academic language proficiency, and these scales do not reflect the child's educational and cultural-linguistic experiences. An example of a popular cultural belief in mainstream America affecting teacher's personal beliefs is that children are like sponges for language learning, and thus they outperform adults in second-language learning. This myth is not in concert with findings of studies (e.g., Gonzalez,

Schallert, de Rivera, Flores, & Perrodin, in press) suggesting that adults are better second-language learners than children. The conclusions are that adults have already developed cognitive structures and strategies to use as tools for transferring knowledge from their first into their second language.

The perspective taken in the present study is related to a constructivistic position which considers that teachers' belief systems are dynamic internal representations of concepts related to: (a) prior personal and professional experiences within a specific cultural milieu and content module, and (b) learning within a life-time process. Moreover, the present study considers that tacit beliefs can act as shields preventing new knowledge construction and maturational processes of cognitive-ethical development which act as glasses or windows to reality leading to professional beliefs or myths. It seems that one of the most helpful opportunities for teachers to explicitly articulate their beliefs is to confront them with a real-life, complex, and ill-structured direct classroom experience to construct knowledge derived from practice. For instance, in the present study a group of teachers were asked to write about their own beliefs. Another group of teachers acted as researchers for categorizing the data and describing patterns found in their classmates' beliefs on multicultural issues.

Examples from a study of in-service teachers taking a multicultural graduate course are provided below for illustrating personal and professional beliefs (Gonzalez, 1993b). Pre-tests and post-tests information of these teachers' knowledge levels in different areas of multicultural education were collected, revealing the existence of personal and professional beliefs and lack of academic knowledge. In relation to one of the areas of academic knowledge in multicultural education, theories of first-and-second-language learning, most in-service teachers responded in the pre-test with personal (e.g.,"language acquisition is easier for children than for adults", 23.6%, n=13) and professional beliefs (e.g., "first language instruction improves learning",12.7%, n=7). Moreover, on the pre-test, 20.2% of the teachers' responses (n=11) indicated a lack of

knowledge of theories describing first-and-second-language learning. The post-test showed a more complex pattern of responses indicating changes in personal beliefs. For example, in the post-test only 1.8% (n=1) of the responses indicated that "language acquisition is easier for children," a category that dropped drastically in comparison to the pre-test. Changes were also noted in the teachers professional beliefs on the post-test as new categories based on academic knowledge emerged. For instance, 17% (n=9) of the respondents on the post-test indicated that "the second language enhances the development of the first language." There were also knowledge gains as 14% (n=8) of the respondents referred to Piaget's and Chomsky's theories of language learning, and 16% (n=9) of them referred to specific educational programs. Change in professional and personal beliefs and knowledge gains were obtained on the post-test for all the academic knowledge areas (e.g., intelligence theories, handicapping conditions and disabilities, gender, tracking, etc.), but differences also emerged in the specific patterns obtained. In light of these findings, Gonzalez (1993b) concluded that teachers' academic knowledge gain was preceded by an increase in their awareness of their own beliefs and of the influence of prior sociocultural experiences.

Method

Objectives

The two-fold purpose of the present study was: (a) to describe patterns of cognitive-ethical development and educational belief systems held by in-service teachers taking a multicultural education graduate course, and (b) to explore the use of critical thinking as a teaching methodology in multicultural education courses for changing the beliefs of in-service teachers. Thus, this study had both a practical inquiry and a formal research aspect as it explored teaching methodologies that stimulated in-service teachers to reflect critically on their belief systems, as well as documented teaching methodologies to contribute to a scholarly knowledge base.

Research Questions

Three research questions were explored in this study:

(1) What are the patterns of cognitive-ethical developmental stages for general content, and educational beliefs held by in-service teachers regarding multicultural education issues?

(2) Do in-service teachers show different patterns of cognitive-ethical developmental stages and educational beliefs across different content modules?

(3) Is critical thinking an effective pedagogical strategy for creating cognitive dissonance in teachers' belief systems towards multicultural issues?

Subjects

Subjects for this study were in-service teachers taking a graduate level multicultural education class who were invited by their instructor "to take the risk" to participate in a learning experience as subjects and "students-researchers." Out of 65 students taking the class, 55 (84.6%) volunteered as subjects, and 10 (16.6%) volunteered as student-researchers. This latter group was divided into two groups of 5 students each, who assisted the researcher in the analysis of the subjects' (a) beliefs papers using cognitive-ethical developmental stages (Perry, 1970), and (b) reaction papers using data driven content categories. These ten student-researchers did not form part of the subjects group, as they were to categorize qualitative data in an objective manner. The majority (55.9%) of the 55 subject volunteers were in-service teachers and part-time students. All subjects were females between 26 and 45 years of age. In the youngest age group (20-35 yrs.) there were 35 students (63.6%), and in the oldest age group (36-45 yrs.) there were 20 students (36.4%). The majority of students (81.8%, n=45) reported a White ethnicity; only a small proportion of students identified with a minority ethnic background: Hispanic (7.3%, n=4), African-American (5.5%, n=3), and Asian-American (5.5%, n=3). The student-researchers had similar characteristics as the ones described above for subjects.

Instructional Strategies and Instruments Used

In the present study, it is considered that learning about multicultural education challenges the instructor and students to take the risk to engage in a reciprocal cognitive and personal growth process within an environment that stimulates freedom within structure (King, 1992). Critical thinking was used as a pedagogical tool for stimulating the emergence of cognitive dissonance in teachers and increasing their metalinguistic awareness. Different opportunities and ample developmental time were provided to enable participants to make explicit their beliefs through different individual and group activities involving thinking, discussing, writing, reading, and discovering their own positions regarding major controversial issues in multicultural education. A beliefs paper and a reaction paper written by the students were used for measuring their cognitive-ethical development and explicit beliefs. These two papers were part of the regular assignments for the course and were written at different points in time during the semester. The beliefs paper was written during the beginning of the semester, and the reaction paper was written by the end of the semester.

Instructions given for writing these two papers were based on open-ended questions that stimulated critical thinking skills and resembled the "freedom within structure" environment that students had been exposed to throughout the semester. Students were asked to write an individual five page double-spaced paper to describe their educational beliefs or to react to readings assigned in which controversial issues regarding the English-Only Movement (Padilla, Lindholm, Chen, Duran, Hakuta, Lambert, & Tucker, 1991) and America 2000 Communities (Council of Exceptional Children, 1991) were discussed. Moreover, a variety of formats for course presentations were used (e.g., case studies, interviews, students' presentations, invited speakers). This study used Perry's model (1970) as a framework for developing pedagogical activities to promote a parallel growth in the cognitive and affective domains (see the section on methodological problems involved in measuring beliefs presented in the discussion of Perry's model).

Results and Discussion

Beliefs Paper

Data generated from the beliefs papers were used to answer the first two research questions: (1) What were the patterns of cognitive-ethical developmental stages for general content and educational beliefs held by in-service teachers regarding multicultural education issues?, and (2) Did in-service teachers show different patterns of cognitive-ethical developmental stages and educational beliefs across different content modules?

In order to analyze the research questions stated above, two categorizations of the belief papers were applied using Perry's scheme (1970). The first one resulted in overall scores which were used to assign cognitive-ethical developmental stages for general content, and the second one used content specific scores to assign cognitive-ethical developmental stages (see Table 1). For both data categorizations, a reliability coefficient of $r = .85$ was obtained among the five volunteer "student-researchers" and the author of this paper, assuring a good confidence level in the results.

Cognitive-ethical developmental stages for general content. When the student-researchers let the data speak to them, they were amazed by the patterns found across papers. The patterns emerging from the beliefs papers were in opposition to the student-researchers' original perceptions of beliefs as a disconnected set of subjective individualities. A clear pattern emerged pointing out the existence of profiles about the characteristics of teachers at each stage. Data revealed that the third cognitive-ethical developmental stage of Relativism, corresponding to position 6 (n=20, 36.4%) was the most commonly attained by teachers (see Table 1). These figures are higher than those found by Bradley-Stonewater, Stonewater, and Hadley (1986) in college students. At the third stage of Relativism teachers could give practical examples based on their beliefs. They believed that they should guide students in contextualizing knowledge, and that they should challenge and support students as they gain more

Cognitive-Ethical Developmental Stages (Perry, 1970)	Overall		Belief Papers — Content Analysis													Reaction Overall	
			Class Mngmnt		Methods Strategies		Teacher Educati-n		Children's S-Em Dev		Children's Lrng Proc.		Learner's Diversity					
	n	%	n	%	n	%	n	%	n	%	n	%	n	%		n	%
First Stage: Dualism	7	12.7	20	36.4	4	7.2	9	16.4	3	5.5	2	3.6	3	5.5		0	0
Position 1	1	1.7															
Position 2	3	10.9															
Second Stage: Multiplicity	3	5.5	12	21.7	7	12.7	3	5.5	14	25.5	8	14.5	12	21.7		5	9
Position 3	3	5.5															
Position 4	0	0															
Third Stage: Multiplicity	30	54.6	20	36.4	17	31	28	50.9	17	31	26	47.3	18	32.8		11	20
Position 5	10	18.2															
Position 6	20	36.4															
Fourth Stage: Commit&Sym	15	27.2	3	5.5	27	49.1	15	27.4	21	38.2	19	34.6	22	40		39	71
Position 7	4	7.2															
Position 8	6	10.9															
Position 9	5	9.1															

Table 1: Frequencies and Percentages of Cognitive-Ethical Developmental Stages Versus General and Content Analysis of Educational Beliefs Papers and Reaction Papers (N=55).

knowledge, clarify their commitments, and live up to their values. They believed the students' role is to evaluate perspectives and make judgments in context on the basis of evidence. They described their classroom environment as an open one in which the learning-teaching situation is evaluative.

Regarding the profiles emerging from the data, the first stage of Dualism included teachers who viewed their roles as imparters of knowledge, while students just sat quietly on task, completing all work on time. Typically, these were novice teachers who could not illustrate their teaching principles with examples of their pedagogical practices as a result of their tacit beliefs. The second stage of Multiplicity (n=3, 5.5%) was exemplified by teachers who had begun to recognize different viewpoints possibly due to their acquired teaching experience (an average of two years); however, they were still looking for the right answers in an external source. These teachers reflected deeper thought and more time invested in clarifying and explicitly articulating their personal and professional beliefs. Their efforts indicated greater respect for their students' individuality. Teachers who were in the fourth stage of Commitment and Empathy (n=15, 27.2%) demonstrated awareness of their impact on students, as they were sensitive to individual differences, and assumed great responsibility for improving society. These were experienced teachers who could articulate clearly their educational beliefs. They acted as advocates and created student-centered learning environments for "the whole child," giving more emphasis to socioemotional development than to the academic domain. They favored flexible and eclectic teaching strategies for meeting the children's idiosyncratic needs, and they preferred an open classroom environment that created a sociocultural learning context.

The second pattern found was the relationship between expression of both beliefs and concrete educational practices, meaning higher levels of cognitive-ethical development in Perry's scheme. A possible explanation for this relationship could be that the teachers used their experience for explicitly articulating beliefs based on educational practices which were more creative, holistic, and eclectic. In addition, probably due to their teaching experience, these expert

teachers could go from theory to practice in a coherent manner, suggesting that teaching is a complex art. For example, one of the experienced teachers stated her belief that, "Teachers must demonstrate a respect for all students as fellow human beings, while requiring that students do the same." She continued by providing an example of her stated belief. She wrote, "I have discovered that no matter what is the age of the child, each child knows something that I do not know. That is why I always try to determine what some of that knowledge is, so that I can help the child build on that."

A third pattern emerged in which teachers who expressed beliefs related to the diversity of learners and who could illustrate these beliefs using concrete teaching practices reached a higher stage. Furthermore, the tendency of experienced teachers to express their beliefs on diversity resulted in a more eclectic and flexible view of learning and development. These expert teachers attained the Empathy and Commitment stage (n=15, 27.2%) as they acted as role models for developing responsibility and love for learning in their students. A teacher who considered herself responsible for creating an appropriate learning situation for meeting children's diverse needs wrote,

> I do not know of any difficult-to-teach child on a one-on-one situation. However, when I do not share a common language with a child, it is a difficult situation for us to exchange information. It can appear that she is a difficult-to-teach child, when in actuality I may simply be an unskilled teacher under these circumstances.

A fourth pattern that emerged indicated that teachers had difficulty in seeing a clear connection between teaching practices, research, and teacher education programs. As Millies (1990) suggested, experience by itself does not assure gain in accessibility to the implicit connections existing between beliefs, concrete educational strategies, and academic knowledge generated through research. One novice teacher wrote,

> We need a support group within our training programs where we can hear the voice of other teachers, and have a

space for reflecting upon our teaching difficulties and problems. We also need to discuss theory within a practical real-life context, so that we can see first hand how research findings are translated into practice.

An experienced teacher stated,

> Philosophies are usually taught in teacher education programs. That is why education is more an art than a science. However, we do not need to indoctrinate teachers, we need to teach and empower them with mastery of techniques and subject matter. Educators need to know bilingual and multicultural education strategies, and not waste their training time discussing political issues that divide people rather than [help] them to collaborate with each other.

Thus, regardless of teaching experience, teachers needed an opportunity to realize the powerful role of beliefs and of research knowledge on teaching practices.

A fifth pattern observed in the subjects' belief papers was the influence of the social and cultural contexts on the content of their beliefs. An argument proposed in the present study is that if the beliefs papers had been written in the past, they would probably had received lower scores on Perry's scheme. Presently, the school curriculum emphasizes individual students' potential for problem-solving. In addition, the civil right movements of the 60's and 70's helped raise teachers' consciousness about areas of education equity such as: special education, multicultural and bilingual education, socioemotional development, giftedness, gender and socioeconomic issues, and educating "the whole child." Presently, teachers are becoming aware of their responsibilities and the impact they have as social agents and models.

In summary, teachers are accepting the challenge and making the commitment of meeting children's diverse needs. One of the experienced teachers wrote, "I believe that teachers can and do make a difference. Each child has abilities to develop and wants to learn.

We simply have to find the time and energy to learn how to approach each child."

Cognitive-ethical developmental stages across content modules. The rationale for this second categorization is based on the assumption that different levels of cognitive-ethical development would be found within and between individuals across content referred modules. As discussed above, several authors (e.g., Green, 1971, Richardson, in press; Rockeach, 1968) have referred to the existence of central and peripheral belief systems or clusters that would differ across content modules. Other authors (e.g., Lawrence, 1992) have written about the dynamic nature of beliefs and cognitive-ethical developmental stages, which are portrayed differently across contents. Two broad content areas were identified. The first one refers to the operations or the actual teaching training and procedures, and includes three subareas: classroom management, methods and strategies, and teacher education. The second area describes teachers' educational beliefs and includes three subareas: children's socioemotional development, children's learning processes, and learners' diversity.

Within the first area of operations, the classroom management subcategory describes the learning environment created by the teacher. Examples include an open or closed environment, a democratic versus an authoritarian management style, a teacher's judgmental versus acceptance attitude, and preference for low versus high mobility of the children in the classroom. The methods and strategies subcategory includes a teacher-centered versus a student-centered emphasis, a cooperative group versus a lecture style, and a close versus an open discussion delivery style. The subcategory of teacher education includes the need for improvement through formal training. Within the second area of teachers' educational beliefs is the children's socioemotional development subcategory which includes self-respect, self-actualization, self-confidence, motivation, and respect for others. The learning processes subcategory includes self-direction, risk taking, creativity, curiosity, and imagination. The diversity in learners subcategory includes socioeconomic status, cultural factors, gender, and learning styles.

Using these two broad content areas, operations and educational beliefs, and their corresponding subareas, the students' papers were assigned to a cognitive-ethical developmental stage (Perry, 1970) across content modules. Results for the content analysis of the beliefs papers across these two broad areas and subareas are shown in Table 1. The content categorization results differed from the general categorization of the papers. That showed that even though the general content of a beliefs paper could be categorized within a specific stage on Perry's scheme, the specific beliefs of a teacher tended to vary across different content modules resulting in different cognitive-ethical developmental stages. Thus, educational beliefs and cognitive-ethical development were affected by content modules.

The classroom management category showed the lowest cognitive-ethical developmental stages, with the majority of teachers attaining Dualistic (n=20, 36.4%) and Relativistic (n=20, 36.4%) stages. The majority of those in the Dualistic stage were novice teachers who wanted their students to show low mobility and were judgmental about their behaviors. Probably due to their lack of teaching experience, novice teachers had difficulty in explaining and illustrating their beliefs through concrete teaching practices. One novice teacher was considered to be in the Dualistic stage because she polarized the differences she felt existed between her majority background and her students' minority culture. She wrote,

I feel that my values are not working, because I want to believe that the classroom environment that worked for me is the best for everybody. But I am experiencing social distance when communicating with minority children and their parents. I think that is because I emphasize individualism and learning rules in my classroom, and they are more inclined to collaboration within their minority culture.

In contrast, teachers in the Relativistic stage were more aware of their beliefs and could relate them to teaching practices drawn from their life experiences. These teachers were aware of their students' idiosyncratic needs, and their classrooms resembled open

and democratic environments in which children were stimulated to explore alternatives within different contextual situations. One teacher with some teaching experience wrote,

>   I think that the role of the teacher is to be a facilitator, and not a lecturer. Teachers need to try to learn how to respect their students. I always try to research about the ethnic groups that I am working with as a way to respect their cultures when I am using discipline strategies in my classroom.

This category was followed by children's socioemotional development in which teachers' beliefs ranged from Multiplicity (n=12, 25.5%) to Relativistic (n=17, 31%), and to Commitment and Empathy (n=21, 38%) stages. Given that the teachers participating in this study varied by age and teaching experience, it was no surpriseto find a wide variation in their beliefs regarding children's socioemotional development. Young teachers tended to give more emphasis to academic areas rather than to the stimulation of socioemotional development; thus they attained a Multiplicity stage. One novice teacher stated, "I believe that you need to be really careful about to select a textbook sensitive to cultural differences. Minority children need literature that answers their needs for learning academic content."

Teachers with some teaching experience (an average of two years) attained a Relativistic stage as their beliefs reflected some concern for stimulating socioemotional development in children within some "ideal" educational contextual situations only. They were not yet ready to take a stand and create this "ideal" situation for fear of opposing authorities or experts. One teacher stated,

>   I really do not like to use textbooks because I believe that they emphasize content that is not relevant for my minority students. The content of most textbooks is too far removed from their real-life social and emotional experiences. However, if I do not use textbooks, it bothers my principal, so I have to use them.

Teachers showing a Commitment and Empathy stage reflected beliefs that could be connected with educational practices. They believed that they should emphasize the education of the "whole child." An expert teacher wrote,

> I let my students know about my personal life, so that I can serve as a role model. I also try to provide my students with opportunities for social relations. For example, I also listen to parents input and respect their requests, so that children learn that they can listen to their parents too.

Within the diversity in learners category, teachers' beliefs ranged from Multiplicity (n=12, 21.7%) to Relativistic (n=18, 32.8%), and to Commitment and Empathy (n=22, 40%) stages. This wide range of teachers' beliefs regarding diversity in learners may be the result of a wide variation in their age and teaching experience. Thus, novice young teachers tended to be at the Multiplicity stage as they recognized and respected idiosyncratic differences in learners, but they could not yet explicitly link their emerging beliefs with educational practices. A novice teacher wrote, "I feel inadequate for teaching diverse children because I have not been trained in specific strategies for meeting their needs. I just cannot see myself succeeding [in] real-life situations with them." Teachers with some degree of teaching experience (average of two years) placed their beliefs regarding diversity in learners within different contextual perspectives leading to a Multipicity stage. They could refer to some concrete situations they had experienced in which "learning problems" were explained using different external factors (e.g., minority and low socioeconomic status). A teacher with some degree of experience stated,

> I have a genuine interest in every child regardless of the linguistic-cultural differences. I always did, but it is still difficult for me to figure out how to teach a child who does not speak English. I think that it is my fault that I do not know how to teach them because I do not speak their language.

The more advanced stage of Commitment and Empathy was attained by experienced teachers who could illustrate their beliefs using examples. Their beliefs regarding learners' diversity showed awareness of the powerful influence of their educational decisions, including possible long-lasting consequences of diagnosing, placing, and instructing students. An expert teacher from a minority background stated,

> I consider each child as an individual, and I do not want to pay any attention to labeling groups as minority or disabled. When that information comes in my students' files, I just do not read it. I think that education is a very serious business because you are dealing with your students' lives. I do not want my minority students to feel isolated. I want them to feel confortable with who they are, because I value all my students.

For the teacher education category, the majority of teachers showed Relativistic (n=28, 50.9%) and Commitment and Empathy (n=15, 27.2%) stages. Teachers at the Relativistic stage indicated they could grow professionally by learning subject matter and techniques that could be applied to different contextual situations and diverse populations. They were not aware yet of the influence of their beliefs on their educational practices, as they emphasized content and not teaching and learning processes. For instance, one teacher with some degree of experience stated, "I need to learn techniques for matching my students' learning styles. I do not believe that there is one way of teaching, but that there are different teaching strategies for different contexts." Teachers at the Commitment and Empathy stage believed in the need for teacher education programs to prepare them for meeting the needs of diverse children and to assume the responsibility of educating the "whole child," including socioemotional and academic developmental areas. Thus, these teachers' beliefs showed concerned individuals, who claimed the need for teachers to voice their problems and become aware of the powerful impact of their implicit beliefs on their teaching practices. For example, one experienced teacher wrote, "We need to become aware

of our prejudices and biases and how they affect our work. We need a safe place to accept the challenge of reflecting which is much more important than just learning techniques."

Regarding the children's learning processes category, the majority of teachers attained a Relativistic (n=26, 47.3%) stage, followed by a Commitment and Empathy stage (n=22, 40%). Teachers at the Relativistic stage stimulated children to learn how to evaluate perspectives within different contexts, emphasizing the use of different learning strategies according to characteristics of the content to be learned. For instance, one teacher with some teaching experience stated, "I have taught in several different sociocultural contexts and I have learned that you have to consider different reasons for choosing learning activities and teaching strategies." Teachers at the Commitment and Empathy stage respected individual differences and acted as mentors for encouraging children to develop self-direction, risk taking, creativity, curiosity, and imagination. For instance, one expert teacher wrote, "I believe that for teaching diverse children, I need to individualize instruction, motivate children to become good learners by taking risks, and to teach them 'how to learn' and interact with the environment."

Finally, teachers attained the highest levels within the methods and strategies category: Relativistic (n=17, 31%) and the Commitment and Empathy (n=27, 49.1%) stages. Teachers at the Relativistic stage believed it was important to consider learning contexts for choosing teaching methods and strategies in order to accommodate for individual differences. One teacher wrote, "I believe that I need to integrate my students, but I should also allow for independent problem-solving so that group cooperative work does not become oppressive." Teachers at the Commitment and Empathy stage believed that a student-centered emphasis, cooperative learning, and open discussions have an effect on knowledge. An experienced teacher wrote, "I consider that every student has the ability to learn, but children have different learning potentials, and that is why I think heterogeneous groups help."

In summary, these content analysis results suggest that teacher training programs are probably emphasizing content knowledge such

as methods and strategies. However, it is apparent that more attention is being given now to children's learning process. Nevertheless, teacher education programs need to emphasize diversity in learners, children's socioemotional development; and a more contemporary open, and democratic philosophy for classroom management.

Reaction Papers

Data from the reaction papers were analyzed to answer the third research question: Is critical thinking an effective pedagogical strategy for creating cognitive dissonance in teachers' belief systems towards multicultural issues? Reaction papers focusing on two controversial issues in multicultural education (i.e., the English-Only Movement, and America 2000) were analyzed qualitatively using Perry's scheme (1970). The first pattern emerging from the content analysis of reaction papers revealed the presence of profiles for each cognitive-ethical developmental stage. Evidence of the Commitment and Empathy stage was presented in these reaction papers as an increase in the acceptance of responsibilities regarding contemporary sociocultural problems. These teachers were responsible citizens who were preoccupied with the well being of society in general. They supported the improvement of teacher educational programs and the increase in teacher activism in educational reform. They reflected on American values in regard to individualism, freedom of choice, and humanity and their effect on the national community. These teachers could use their personal and professional experiences for evaluating issues and defending their positions. Their arguments were passionate and compelling, showing their commitment to live up to their values.

For instance, an experienced teacher in her America 2000 reaction paper stated,

Our society tries to categorize and compartmentalize individuals, which is a dangerous practice. I value individualism and personal choice which are denied when labels exist within restrictive environments created byinstitutions. For example, a child who is mislabeled as

mentally retarded will be misplaced in a special education classroom, which can become very easily a restrictive environment within the school system.

Referring to the English-Only Movement, an experienced minority teacher wrote,

It has been a pleasure for me to take this course, I have enjoyed reflecting in this class. The majority of my students come from a low socioeconomic status and they also appreciate to be motivated to think by being exposed to other cultures and languages within an enriched environment. I teach a bilingual Spanish/English kindergarten class, and I have experienced lack of appreciation of cultural enrichment by some colleagues. For example, the first grade teacher referred a child who was in my class for testing, resulting in placing him in a self-contained learning disabilities classroom. I disagree with the criteria used for making this decision because Alejandro regressed, he could not do simple tasks anymore, and his high level abstract thinking abilities were not further developed due to poor stimulation. Alejandro is a very bright bilingual child who was not valued by his first grade teacher and the psychologist who evaluated him. I felt that I needed to intervene, as I believe that as teachers we need to become advocates so that we can make a difference.

Teachers in the Relativism stage were able to put knowledge in context on the basis of supporting evidence supplied by their experience, but they had decided to take a "safe" position using authorities as models. These teachers could consider multiple viewpoints, recognize a deeper sense of the debate between opposing positions, and realize power relations between groups; however, they were not ready to accept the responsibilities that come with this challenge. Thus, these teachers offered some support for a tentative and specific solution to the issues discussed, but they did not seem tograsp its ethical and social implications. For instance, one teacher

with some experience wrote in his English-Only Movement reaction paper, "I need more contact with diverse people in the 'real life,' and with experts in teaching diverse children so that I can learn from them how to appreciate multiculturalism. In addition, I need to read more about what the experts think about bilingual education." Another teacher with some degree of experience stated in her America 2000 reaction paper,

> I think that the purpose of education is to facilitate learning of a standard body of information by providing students with opportunities for the mastery of basic concepts that will enable them to compete in the technological world. Creating national standards will not change economical problems because administrators decide on educational programs and curriculums, and teachers have to follow them.

Finally, teachers in the Multiplicity stage could evaluate the advantages and disadvantages of being in favor or being opposed to either side of the issue discussed. They could understand that there is not a unique, clear cut "right answer" to defend or oppose a position; however, they were not ready to take a position of their own yet. For example, one teacher with some degree of experience in his America 2000 reaction paper stated,

> Education serves as a templating agent for disseminating societal/cultural norms and rules. Teachers assist their students in learning-to-learn and to see patterns and connections, to explore, and to apply information for better understanding their environment. However, there is no set way or formula for deriving solutions, such as the educational criteria or standards proposed in America 2000.

Moreover, results showed that there were no teachers in the first stage of Dualism. In the reaction papers, 5 teachers (9%) were in the Multiplicity stage, 11 teachers (20%) were in the Relativism stage, and 39 teachers (71%) were in the Empathy and Commitment stage (see Table 1). A comparison of beliefs papers written at the beginningof the semester with reaction papers written at the end

yielded a second pattern related to the second research question. The majority of teachers attained a Relativism stage in the beliefs paper (n=30, 54.6%) and most of the teachers attained a Commitment and Empathy stage in the reaction papers (n=39, 71%). Thus, it can be concluded that critical thinking can be used as a strategy for stimulating teachers to gain higher cognitive-ethical developmental stages, especially if they are provided with the opportunity to explicitly articulate their beliefs through writing activities. These results can be explained if we assume that the metalinguistic nature of language stimulates learners to access implicit beliefs. Moreover, student-researchers reported that there were benefits from the challenging and meaningful task of categorizing papers into cognitive-ethical developmental stages, because they could reflect and gain awareness of their own beliefs.

A third pattern emerged related to the third research question. In the English-Only Movement papers, a concern for adequate teacher preparation to meet the needs of diverse children emerged. In the America 2000 papers, a concern for societal problems affecting indirectly and directly general education was expressed. Thus, the English-Only Movement papers concentrated on bilingual education and minority students. In contrast, the America 2000 papers discussed specific ramifications of the proposal, such as, funding for majority students.

Conclusions

In relation to the first research question explored in the present study, profiles of the cognitive-ethical developmental stages and the beliefs held by in-service teachers regarding multicultural education issues were described. Analysis of the beliefs papers written during the beginning of the semester revealed that most in-service teachers held educational beliefs that corresponded to a Relativistic stage.

Moreover, analysis of the reaction papers revealed the cognitive and ethical growth potential that these teachers had. These teachers attained the Commitment and Empathy stage by the end of the semester. Thus, teacher training programs need to give teachers the

opportunity to think critically, so that they can realize the powerful influence of their beliefs on their teaching practices to meet the needs of diverse children.

In relation to the second research question, the analysis of beliefs and the reaction papers showed growth along the cognitive-ethical developmental stages and in terms of educational beliefs. This finding supports the effectiveness of critical thinking as a pedagogical strategy. Moreover, teachers reported that they benefited from writing as they could reflect and gain awareness of the influence of their beliefs on the educational success of diverse children. Finally, in relation to the third research question explored in this study, analysis of the beliefs and reaction papers pointed out that teaching experience and content modules make a difference in the level of personal and professional beliefs held by teachers, and in the cognitive-ethical developmental stages identified in the profiles.

This study has educational importance considering the present need to offer high quality education to the growing number of diverse students. Thus, this paper proposes that stimulating critical thinking in teacher education models can restructure schools from within.

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